Name: Date:

Polynomial Factoring practice (version 27)

1. **The quadratic formula says if $ax^2 + bx + c = 0$ then $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$. Use the quadratic formula to solve the following equation.**

   $$x^2 + 12x + 54 = 0$$

   Simplify your answer(s) as much as possible.

2. **Express the product of $-2 - 9i$ and $6 + 4i$ in standard form ($a + bi$).**

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3. **Write function $f(x) = x^3 - 2x^2 - 36x + 72$ in factored form. I'll give you a hint: one factor is $(x + 6)$.**

4. **Polynomial p is defined below in factored form.**

$$p(x) \;=\; (x+5)^2 \cdot (x+1) \cdot (x-4) \cdot (x-7)^2$$

Sketch a graph of polynomial $y = p(x)$.